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PTO/SB/05 (12/97)
Approved for use through 09/30/00. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

UTILITY PATENT APPLICATION TRANSMITTAL
(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 003395.P001 Total Pages 7

First Named Inventor or Application Identifier Frank A. Galdes

Express Mail Label No. EL034146954US

ADDRESS TO: **Assistant Commissioner for Patents**
Box Patent Application
Washington, D. C. 20231

APPLICATION ELEMENTS
See MPEP chapter 600 concerning utility patent application contents.

1. X Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)

2. X Specification (Total Pages 28)
(preferred arrangement set forth below)
- Descriptive Title of the Invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to Microfiche Appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (if filed)
- Detailed Description
- Claims
- Abstract of the Disclosure

3. X Drawings(s) (35 USC 113) (Total Sheets 8)

4. X Oath or Declaration (Total Pages 5)
   a. X Newly Executed (Original or Copy)
   b. ___ Copy from a Prior Application (37 CFR 1.63(d))
   (for Continuation/Divisional with Box 17 completed) **(Note Box 5 below)**
   i. ___ DELETIONS OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

5. _ Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. _ Microfiche Computer Program (Appendix)

7. __ Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
   a. ____ Computer Readable Copy
   b. ____ Paper Copy (identical to computer copy)
   c. ____ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. X Assignment Papers (cover sheet & documents(s))
9. ___ a. 37 CFR 3.73(b) Statement (where there is an assignee)
   X b. Power of Attorney
10. ___ English Translation Document (if applicable)
11. ___ a. Information Disclosure Statement (IDS)/PTO-1449
    ___ b. Copies of IDS Citations
12. ___ Preliminary Amendment
13. X Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
14. ___ a. Small Entity Statement(s)
    b. Statement filed in prior application, Status still proper and desired
15. ___ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. X Other: Express Mail Certificate of Mailing

17. **If a CONTINUING APPLICATION,** check appropriate box and supply the requisite information:
___ Continuation ___ Divisional ___ Continuation-in-part (CIP)
of prior application No: ___

18. **Correspondence Address**

___ Customer Number or Bar Code Label ___
(Insert Customer No. or Attach Bar Code Label here)

or

X Correspondence Address Below

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PTO/SB/05 (12/97)
Approved for use through 09/30/00. OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL

TOTAL AMOUNT OF PAYMENT ($) $830.00

Complete if Known:
Application No. Not Yet Assigned
Filing Date Concurrently Herewith
First Named Inventor Frank A. Galdes
Group Art Unit Not Yet Assigned
Examiner Name Not Yet Assigned
Attorney Docket No. 003395.P001

METHOD OF PAYMENT (check one)

1. [ ] The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

   Deposit Account Number 02-2666
   Deposit Account Name ______

   [X] Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

   [ ] Charge the Issue Fee Set in 37 CFR 1.18 at the Mailing of the Notice of Allowance, 37 CFR 1.131(b)

2. X Payment Enclosed
   X Check
   ___ Money Order
   ___ Other

FEE CALCULATION (fees effective 10/01/97)

1. FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	790	201	395	Utility application filing fee	790.00
106	330	206	165	Design application filing fee	
107	540	207	270	Plant filing fee	
108	790	208	395	Reissue filing fee	
114	150	214	75	Provisional application filing fee	

SUBTOTAL (1) $ 790.00

2. CLAIMS

		Extra		Fee from below		Fee Paid
Total Claims 20	− 20 =	0	X	22.00	=	0.00
Independent Claims 3	− 3 =	0	X	82.00	=	0.00
Multiple Dependent Claims		0	X	270.00	=	0.00

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
103	22	203	11	Claims in excess of twenty	
102	82	202	41	Independent claims in excess of 3	
104	270	204	135	Multiple dependent claim	
109	82	209	41	Reissue independent claims over original patent	
110	22	210	11	Reissue claims in excess of 20 and over original patent	

SUBTOTAL (2) $ 0.00

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for response within first month	
116	400	216	200	Extension for response within second month	
117	950	217	475	Extension for response within third month	
118	1,510	218	755	Extension for response within fourth month	
128	2,060	228	1,030	Extension for response within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive unavoidably abandoned application	
141	1,320	241	660	Petition to revive unintentionally abandoned application	
142	1,320	242	660	Utility issue fee (or reissue)	
143	450	243	225	Design issue fee	
144	670	244	335	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	40.00
146	790	246	395	For filing a submission after final rejection (see 37 CFR 1.129(a))	
149	790	249	395	For each additional invention to be examined (see 37 CFR 1.129(a))	

Other fee (specify) ______________________ ______

Other fee (specify) ______________________ ______

SUBTOTAL (3)$ 40.00

*Reduced by Basic Filing Fee Paid

SUBMITTED BY:

Typed or Printed Name: Judith A. Szepesi

Signature Judith Szepesi Date 8/21/98

Reg. Number 39,393 Deposit Account User ID ______________

(complete if applicable)

Approved for use through 09/30/98 OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Patent

UNITED STATES PATENT APPLICATION
FOR

A METHOD AND APPARATUS FOR NETWORK BASED CUSTOMER SERVICE

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ATTORNEY'S DOCKET NO. 003395.P001

Express Mail Certificate

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I hereby certify that I am causing this paper or fee to be deposited with the United States Postal Service "Express Mail Post Office to Addressee" service on the date indicated above and that this paper or fee has been addressed to the Assistant Commissioner for Patents, Washington, D. C. 20231
Edith Fuentes
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(Signature of person mailing paper or fee)
8-21-98
(Date signed)

A METHOD AND APPARATUS FOR NETWORK BASED CUSTOMER SERVICE

FIELD OF THE INVENTION

The present invention relates to customer service, and more specifically, to network based customer service.

BACKGROUND

A recent business trend is to reduce help desk traffic by promoting the Internet as a way for customers, and individuals within the corporation, to access information. The Internet is particularly suited for this because of its global reach and relatively easy accessibility.

One prior art method of providing customer service is by posting a question in a Question and Answer (Q&A) list, and waiting until either service personnel or other customers provide an answer by posting it to the same Q&A list. The answer may or may not be correct.

Another prior art Internet based customer service solution is posting a large "frequently asked questions" (FAQ) list that answers most typical questions.

While using the Internet reduces costs, for most prior art systems it reduces customer satisfaction. The customer does not feel that he or she is receiving individual attention. Furthermore, there is no assurance that the answer is correct for the specific situation in which the customer finds himself or herself.

One prior art method of providing more interactive customer service on the Internet is a web based help-desk. The customer logs on to a "help page," that is separate from the area in which the customer had trouble. The customer then fills out a help request, including answering a series of

questions regarding the problem. While the customer is connected to this help page on the Internet, the customer's computer system sends configuration information to service technicians. The service technicians evaluate the data from the computer and the help request. The service technicians then call the customer to discuss the problem.

However, this requires the same amount of help desk traffic as a direct 800 number help desk. Additionally, filling out the help request is a chore that takes considerable time. Furthermore, some customers do not like having the contents of their personal computers surveyed, especially if at least some sections of that computer are not relevant to the problem, and contain private information. In addition, the customer must leave the web page on which he or she encountered the problem to log on to the help page to start this help process. This interrupts normal work, and is a hassle.

SUMMARY OF THE INVENTION

A method and apparatus for network based customer service is described. In response to a client requesting help, a menu including three levels of interaction is displayed. One level of interaction is self-help searching in a database of information. A second level of interaction is asynchronous help, requesting help and receiving a reply. The third level of interaction is synchronous help, interaction with an advisor. If the client selects synchronous help, the method includes the steps of alerting the advisor and displaying a list of previously visited sites by the client to the advisor. The synchronous help method further includes providing a synchronized display between the client and the advisor, such that the advisor sees an identical display to the client.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is illustrated by way of example, and not by way of limitation, in the figures of the accompanying drawings and in which like reference numerals refer to similar elements and in which:

Figure 1 illustrates one embodiment of a network including a client and server system.

Figure 2 illustrates one embodiment of a server system in which the present invention may be implemented.

Figure 3 illustrates one embodiment of a help system block diagram.

Figures 4 illustrates one embodiment of an overview flow chart of the collaborative process.

Figure 5 illustrates one embodiment of a flowchart illustrating a self-help search.

Figure 6 illustrates one embodiment of a flowchart of asynchronous help.

Figure 7 illustrates one embodiment of a flow chart of synchronous help.

Figure 8 illustrates one embodiment of slider bars.

DETAILED DESCRIPTION

A method and apparatus for a network based customer service is described. As more and more information becomes available through a network such as the Internet, LAN, WAN or similar network, customer service should improve commensurably. A network based customer service, that allows a company to provide services in a faster and more organized matter, is advantageous.

Figure 1 illustrates a network including a client and server system. A customer 110 is coupled to a network 120. The network 120 may be the Internet, a LAN, a WAN, or a similar network 120. The customer 110 has access to a database 140 and corporate web site 150 through the network 120. The corporate web site 150 may implement a help system as described below. Alternatively the customer's system 110 may implement the help system.

An advisor 130 may be coupled to the network 120. The advisor 130 may be a customer service representative, another customer, an automated system, or any other mechanism that provides help to the customer 110. For one embodiment, the advisor 130 is not always coupled to the network 120. Furthermore, a voice connection 160 may be established between the customer 110 and the advisor 130, when the customer 110 requests help, as will be described below. For one embodiment, the voice connection 160 is established through a conventional telephone system. Alternatively, the voice connection 160 may be established through the network 120, or through some other means, such as satellite.

The customer 110 can browse a number of sites through the network 120. If the customer 110 requests help a connection is established between the customer 110 and the advisor 130.

Figure 2 illustrates one embodiment of a server system in which the present invention may be implemented. For one embodiment, the help system is implemented in a client-server system.

Figure 3 illustrates a block diagram of one embodiment of a help system. The collaboration unit 300 is located on a server, and permits the advisor to respond to customer help requests. For one embodiment, the collaboration unit 300 is located on the advisor's system. The database unit 360 is located on a server. For one embodiment, the database unit is located on the same server as the collaboration unit 300. For another embodiment, the database unit 360 is coupled to the collaboration unit 300 through a network connection 355.

The collaboration unit 300 includes a network connection unit 310, permitting the collaboration unit 300 to interact with a customer. For another embodiment, the collaboration unit 300 also interfaces with the database unit 360 through the network connection unit 310.

The collaboration unit 300 further includes a communication channel 315. For one embodiment, the communication channel 315 includes a digital connection for text, images, video, etc. and a voice channel. For one embodiment, the communication channel 315 is established through the network connection unit 310.

The collaboration unit 300 further includes a workflow controller 325. The workflow controller 325 controls what cases are routed to each advisor. The workflow controller 325 also tracks the actions of the advisor and opens

and closes cases. For one embodiment, the workflow controller 325 is a single system that controls workflow to all of the advisors.

When a new case is opened by the workflow controller 325, the context grabbing unit 340 collects context information from the customer's system, to aid the advisor in helping the customer. Context information includes the web tracks of the customer, the locations he or she visited prior to asking for help. For one embodiment, the web tracks also include the actions of the customer at the prior locations. For one embodiment, the context may further include customer history. Customer history, for one embodiment, includes previous questions asked by the customer as well as personal information about the customer. All of this information may be used by the advisor to help the customer.

The collaboration unit 300 further may include a synchronization unit 320. For one embodiment, after a case is opened to respond to a help request, the advisor establishes a connection with the customer through the communication channel 315. For one embodiment, the advisor may also walk the customer through a web page to answer the customer's questions. The synchronization unit 320 allows the customer's and advisor's browser display the same text and images at the same time.

The collaboration unit 300 further includes a search system 350, that permits the advisor to search a database to answer the customer's question. The data may be in the data unit 370 of the database unit 360. For one embodiment, if the advisor does not know the answer to the customer's help request, the search system 350 is automatically engaged to find an answer. For one embodiment, if the advisor can not answer with the help of the search system 350, the elevation unit 330 elevates the customer's help request. The

elevation unit 330 collects the context information gathered by the context grabbing unit 340, and the information about the collaborative session collected by the workflow controller 325, and passes them to a second advisor. For one embodiment, the second advisor may be a manager or a technical specialist.

The posting generator 345 may be used if an answer is found to the customer's help request. The posting generator 345 allows the advisor to "stick" a posting to a web page discussed with the customer. The posting may include text, audio information, video, etc. This posting is associated with the specific web page for the customer. For one embodiment, the posting is persistent and appears on the web page every time the customer opens that web page, or until the customer closes the posting. For one embodiment, the postings generated by the posting generator 345 are stored in the database unit 360, not on the customer's computer system.

A report generation unit 335 may be used to generate a report on a specific case, or on some or all of the cases handled by the collaboration unit 300. For one embodiment, the report generation unit 335 automatically generates reports. Some reports, for example are: the number of questions answered by an advisor, the number of questions asked about any one location, the percentage of customers who asked questions, etc.

The database unit 360 includes data 370 that is searched by the search system 350. The database 370 includes past postings and contexts. The database 370 may further include a help file, a frequently asked questions (FAQ), or other data. The database unit 360 may further include a purge unit 380. The purge unit 380 may purge data in the data unit 370 if the data was not used for a long time. For one embodiment, if a data in the database 370 is

not accessed for a period of time, it is purged. For example, the data may include an expiration date that is refreshed every time an access to the data is made. In this way, unused data is purged. For another embodiment, the purge unit 380 purges data relating to pages that are no longer available.

Figures 4-7 illustrates one embodiment of a flow chart of the operation of the present invention. Figure 4 illustrates an overview of the collaboration process.

At block 410, the customer indicates that he or she needs help. For one embodiment, the help form is accessible from a web page on which the customer has questions. For one embodiment, there is an icon on a web page indicating that the customer needs help. When the customer clicks on that icon, a help request form is displayed, which the customer then completes. For another embodiment, the customer's system dynamically overlay a help button over the web page. For yet another embodiment, the customer submits his or her help request via e-mail, telephone, or another method. If the help request is not submitted in an electronic form, it may be converted into an electronic query automatically or manually.

At block 415, a case is opened in a workflow system. The workflow system is on a server that receives the help request. In response to receiving a help request, a case is opened. For one embodiment, the case includes the identity of the customer, the customer's specific question, and other information. For one embodiment, the other information may include a history of previous questions from the same customer, information about the skill level of the customer, and any further available information that improves a interaction between the customer and the customer service system.

At block 420, the process tests whether the customer is using a thin client or a thick client. A thick client is a system that automatically collects all relevant information from the customer. A thin client may only collect the customer's identity. For one embodiment, if the help request was received through an e-mail request, telephonic request, or by another means, the client is designated as a thin client.

If the customer is using a thick client, relevant information is automatically collected by the system. If the customer is using a thin client, the process continues to block 425. At block 425, context is collected. The process then continues to block 430. If a thick client was used, the process continues directly to block 430 direction.

At block 430, the process queries to determine the priority of response. The customer may indicate a number of possible priorities. For one embodiment, the priorities are high, medium, and low.

If low priority was selected, the process continues to block 445, and a self-service lookup is initiated. The self-service lookup is described in more detail with respect to Figure 5.

If medium priority was selected, the process continues to block 440, and an asynchronous collaboration is initiated. Asynchronous collaboration is described in more detail with respect to Figure 6.

If high priority was selected, the process continues to block 435, and a synchronous collaboration is initiated. Synchronous collaboration is described in more detail with respect to Figure 7.

Each of the types of responses, synchronous collaboration at block 435, asynchronous collaboration at block 440, and self-help lookup at block 445, continue to block 450.

At block 450, data is saved in a database 450. The database 450 is available to the advisor, and may be available to the customer, for searching. The data saved in the database 450 enables a second advisor to determine what the question and the answer were. The database 450 is used to provide consistent answers, and enhance searching for an answer.

At block 455, the workflow case database is updated. This update indicates how the customer's question was disposed of, and that the case was completed. For one embodiment, the information is entered by the advisor. Alternatively, the process may automatically determine the disposal of the case, and update the database.

At block 460, the customer's personal solution, determined during the session at block 435, 440, or 445, is posted. This solution is now available to the customer persistently. The answer is also available to other customers through the database.

Figure 5 illustrates one embodiment of the process of self-service lookup. At block 510, the self-service lookup is initiated. For one embodiment, the self-service lookup is initiated in response to a customer posting a low priority help request.

At block 515, the process tests whether the customer has selected a search basis. For one embodiment, the type of search used depends on the search basis. For one embodiment, the search basis may include:

- keywords, i.e. a text search,
- context, a current location from which the help was requested,
- structured search, i.e. searching through a tree.

One of these search bases may be selected. Alternatively, a combination of one or more of these search bases may be selected, for example a context based search further refined using keywords.

For another embodiment, this step may be skipped and the process may automatically select the search type. For another embodiment, a combination of one or more of the search basis may be used for the search.

If the customer selects a text search, the process continues to block 520. At block 520, a search data entry block is displayed, allowing the customer to type in a search. For one embodiment, the search is a Boolean search, allowing a complex query. For another embodiment, the text search is an English search that allows the customer to type in a query in normal English, and the search engine parses the query to obtain search terms. Alternative ways of searching are known in the art and may be used. When the customer enters the query, the process continues to block 535.

If the customer selects a "current page" based search, the process continues to block 525. At block 525, postings relating to the current page from which the customer requested help are displayed. For one embodiment, the postings are displayed with headers indicating the topic of the posting, allowing the customer to select postings that may be relevant to the customer's question. For one embodiment, the process then continues to block 545. Alternatively, if there are too many postings associated with the page, the process may continue to block 535.

If the customer selects a "context based" search, the process continues to block 530. At block 530, the process obtains the customer's web tracks. The web tracks, for one embodiment, include past locations, i.e. what web pages the customer visited prior to asking for help. The web tracks may further

include the actions of the customer at each of the previous sites. For one embodiment, the web tracks include only those sites and actions that are relevant. Thus, for example, if prior to starting the process leading to the current question, the customer visited other sites, such as a search engine, web store, bank, etc., that information is not collected. The process then continues to block 535.

At block 535, the customer is allowed to select keys/specificity. The customer may, at this point, select how closely the context, text, or page location of the customer has to match the data associated with the postings to be displayed. For one embodiment, this block may be left out of the process. For another embodiment, this block is selectively included in the process if the number of postings found otherwise is excessive.

At block 540, a set of hierarchical folders is displayed with headers indicating the type of postings included in each of the folders. For another embodiment, an alternative means of display may be used.

At block 545, the customer is allowed to narrow or broaden the search. For one embodiment, the customer changes the scope of the search using slide selection bars. One embodiment of bars are illustrated in Figure 8.

At block 550, the process determines whether the customer has found an answer. For one embodiment, the customer may indicate that he or she has found an answer by pushing an "answer found" button, or the process may determine in some other way that the customer has found the answer.

If the answer was not found, the process continues to block 565. At block 565, the customer is permitted to execute a new search or change the search basis. For one embodiment, the customer is also allowed to change the priority of the help request, thereby requesting another type of help. Thus,

the customer may decide that he or she can not obtain an answer using self-help, and may request asynchronous or synchronous help.

If the answer was found at block 550, the process continues to block 555. At block 555, the customer may create a posting associated with the web page. This posting may clarify the answer the customer has found. This posting is useful for the customer, since it is persistent and remains associated with the web page for this customer. For another embodiment, an electronic agent may push relevant information onto the customer's computer system. For one embodiment, push technology is used. For another embodiment, relevant information tagged by the customer is saved to the customer's system using another method.

At block 560, the customer's click stream, or web tracks, are added to the context for the answer. Thus, the context gathered during this interaction is added to the context of the answer in the database. For one embodiment, the search text may also be added to the context for the answer. Adding this information to the context simplifies the search procedure for the next customer who has a similar query.

For another embodiment, the self-help process may be simplified. In that instance, the context-based search is automatically selected. The process then determines an answer, and an electronic agent pushes the answer to the customer's system. This methodology does not require customer interaction with the help system. The process described with respect to Figure 5 is used, but all decisions indicated to be made by the customer are automated. For one embodiment, the customer can select this type of self-help. For another embodiment, based on customer information, i.e. if the customer is

inexperienced with computers, the system may automatically select this agent based self-help method.

Figure 6 illustrates the process of asynchronous collaboration. Asynchronous collaboration permits the customer to post a help query. The help query is answered by an advisor at a later time, and the response is posted to the customer. The customer can then access the answer. This process takes place asynchronously. For one embodiment, asynchronous help generally posts responses to a help query within 24 hours.

At block 610, the asynchronous collaboration is initiated. For one embodiment, the asynchronous collaboration is initiated in response to a customer posting a medium priority help request.

At block 620, the help request is transmitted to an advisor. For one embodiment, the advisor may be a customer service representative. For another embodiment, the advisor may be an artificial intelligence. For yet another embodiment, the advisor may be another customer.

At block 630, the web tracks of the customer requesting help are transmitted to the advisor. As described above, the web tracks may include past locations and past actions of the customer.

At block 640, the customer's history is retrieved. For one embodiment, the customer's history may include previous help requests. For another embodiment, the customer's history may include the customer's previous actions with respect to this help request. Thus, for example, if the customer initially did a self-help search, this information is transmitted to the advisor.

At block 650, the process tests whether the advisor has an answer for the customer's request. The advisor may have more experience than the customer, and may be able to obtain an answer without searching. If the

advisor has an answer, the process continues to block 670, otherwise, the process continues to block 655.

At block 655, the advisor is prompted to look up the help request in an answer database. The answer database search for the advisor is similar to the search for the self-help, as discussed with respect to Figure 5. For one embodiment, the advisor is also able to use a more command-oriented interface for more in-depth searching.

At block 660, the process tests whether the answer was found in the database. For one embodiment, the advisor indicates whether the answer was found by selecting the answer or selecting a "no answer found" button.

If an answer was found, the process continues to block 670. If no answer was found, the process continues to block 665. At block 665, the advisor elevates the help request. As described above, elevating the help request passes the request and associated information to someone else. The process then returns to block 650, where the process determines whether the new advisor, to whom the help request was elevated, has an answer.

If an answer was found at block 650 or 660, the process continues to block 670. At block 670, the answer is posted to the customer. For one embodiment, the answer may be posted as a separate document, a posting directly associated with the web site, or in some other way. The answer may include text, video, audio or other display technology indicating an answer to the customer's help query.

At block 680, the process determines whether the answer exists in the database. For one embodiment, if the advisor knew the answer, and did not find it in the database, the answer may be new to the system. If the answer is found in the database, the process continues to block 685.

At block 685, the information from the customer is added to the existing answer. For one embodiment, the information may include the customer's web tracks, meta-tags, information associated with the help query, as well as the help query itself. This allows the next advisor or customer looking for the answer to find it more easily.

If the answer was not found in the database, the process continues to block 690. At block 690, the answer and some associated information is added to the database. For one embodiment, the answer is added into a folder. For one embodiment, the associated information may include the customer's web tracks, meta-tags associated with the help query, as well as the help query itself. The customer has an answer accessible to the customer and available to advisors and/or customers through the database.

Figure 7 illustrates the process of synchronous collaboration. At block 710, the synchronous collaboration is initiated. Synchronous collaboration provides almost instantaneous personal help to the customer. For one embodiment, the synchronous collaboration is initiated in response to a customer posting a high priority help request.

At block 710, the synchronous collaboration is initiated. For one embodiment, if the customer posted the help request through e-mail or telephone, the synchronous collaboration is initiated when an Internet connection is established between the customer and the agent.

At block 720, the help request, web tracks, and customer history is transmitted to the advisor that will handle this help request. For one embodiment, help requests are allocated to advisors on a time basis, i.e. the advisor that is not busy will receive the next help request. For another embodiment, help requests may be allocated based on the advisor's level of

knowledge in the area of the help request. For another embodiment, the customer's history may influence what advisor receives the help request.

At block 730, the advisor is permitted to prepare by reviewing the customer's data. This informs the advisor of the question the customer has, as well as prior interactions between the help system and the customer.

At block 740, a collaboration connection is established between the advisor and the customer. For one embodiment, the advisor presses a button indicating that the advisor is ready to collaborate with the customer. For one embodiment, this establishes a network link between the customer and the advisor. For anther embodiment, the advisor may also establish a voice link with the customer.

At block 750, the advisor may decide to open a synchronized collaboration window, so that the display for the advisor and the customer is identical. This may be helpful to clarify the problem and/or answer. For one embodiment, this step may be left out. For another embodiment, the advisor may decide to establish the window or not establish the window based on the type of question asked by the customer. For another embodiment, the customer may refuse the establishment of the synchronized collaboration window. If the customer refuses to establish the window, the process continues directly to block 770. If the customer does not refuse the establishment of a synchronized window, the process continues to block 760.

At block 760, a synchronized collaboration window is opened on both system. This window allows an identical display, permitting closer interaction between the customer and the advisor. Furthermore, for one embodiment, the synchronous collaboration window allows the advisor to

see the same display as the customer even if the customer's question comes from a personalized web page.

At block 770, the process determines whether the advisor has an answer to the customer's query. If the advisor has an answer, the process continues to block 790. If the advisor does not have an answer, the process continues to block 775.

At block 775, a database window is opened. For one embodiment, the database window is a separate window from the collaboration window, and the synchronous collaboration window. For one embodiment, the database window is invisible to the customer. For another embodiment, the database window is visible to the customer. The advisor then searches the database.

At block 780, the process determines whether the advisor has found an answer in the database. If the advisor has found an answer, the process returns to block 790. If the advisor did not find an answer, the process continues to block 785. At block 785, the help request is elevated. For one embodiment, the customer is informed of this elevation, and the customer further interacts with the new advisor who receives the elevated request. For another embodiment, the customer remains with the original advisor, and is not informed of the elevation of the request. Once the request is elevated, the process returns to block 770, determining whether the advisor to whom the request was elevated has an answer.

If an answer was found at block 770 or block 780, the process continued to block 790. At block 790, the answer is posted to the collaboration window of the customer. For one embodiment, the collaboration window is a synchronous collaboration window displaying web pages synchronously to the customer and the advisor. For another embodiment, the collaboration

window may be a separate window that allows interaction between the customer and the advisor without a synchronous display. The posting may include text, audio, video, and/or any other type of data to answer the customer's question.

At block 795, the database is updated. The answer may be added to the database, if it was not found in the database. Alternatively, the information associated with the specific customer's question and web tracks may be added to the answer if the answer was found in the database.

This synchronous collaboration provides immediate answers to the customers' high priority questions. In addition, the postings are persistent, and remain associated with the specific page and help query to which they correspond. The each of these types of collaboration also builds a more elaborate database with each request.

Figure 8 illustrates one embodiment of the slider bars that may be used to change answers displayed to the customer. These slider bars may be used to select a number of things. For example, the slider bars may determine the similarity between the web tracks of a previous answer in the database and the current query. The less specificity is requested, the more answers may correspond to the help query. The slider bars may also determine such things as the length of the answer requested, the complexity of the answer requested, the format of the answer requested, etc.

For another embodiment, in a search including multiple terms or previous locations, the importance of each of those terms or previous locations may be individually adjusted. Thus, for example, if the customer has visited six previous locations before asking the question, more

importance may be attached to one particular previous page during the search.

For one embodiment, these slider bars are adjusted during initial searching. For another embodiment, these slider bars may be moved to refine a search during the search process, based on the types of answers retrieved from the initial search.

In the foregoing specification, the invention has been described with reference to specific exemplary embodiments thereof. It will, however, be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention as set forth in the appended claims. The specification and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense.

CLAIMS

What is claimed is:

1. A method comprising:

in response to a client requesting help, displaying a menu including three levels of interaction:

self-help searching in a database of information;

asynchronous help, requesting help and receiving a reply; and

synchronous help, interaction with an advisor;

if the client selects synchronous help,

alerting the advisor;

displaying a list of previously visited sites by the client to the advisor; and

synchronizing display between the client and the advisor, such that the advisor sees an identical display to the client.

2. The method according to claim 1, wherein the identical display is displayed at a same rate for the advisor as for the client.

3. The method according to claim 1, wherein the advisor further has an additional display permitting search of a database of information to help the client.

4. The method according to claim 1, wherein the advisor posts sticky notes on a web site discussed with the client.

5. The method according to claim 4, wherein the sticky notes may include text, hyper-linked references, video, audio, or other information.

6. The method according to claim 4, wherein the sticky notes remain associated with the web site discussed with the client, and the client may go back to the web site and review the sticky notes.

7. The method according to claim 1, further comprising the step of creating a reviewable discussion trail based on the client's discussion with the advisor.

8. The method according to claim 7, wherein the discussion trail is stored on a server, and may be reviewed by the client at any time.

9. The method according to claim 1, further comprising the step of adding a help information generated by the advisor to the database of information accessible to clients.

10. The method according to claim 1, wherein if the client selects asynchronous help, the method further comprising the steps of:

prompting the client to enter a help question;

forwarding the help question to the advisor;

waiting for the advisor to generate an answer the help question; and

returning the answer to the client.

11. The method according to claim 10, wherein the answer returned to the client comprises a web page hyperlink.

12. The method according to claim 11, wherein the answer further includes a sticky note with hints.

13. The method according to claim 12, wherein the hints may include one or more of the following: a video of the advisor explaining the answer, a text message, an audio recording of the hints, or visual images.

14. A method of providing help through a client-server system comprising the steps of:

a server receiving a help request from a client on a client system that is linked to the server;

classifying the help request as a synchronous request or an asynchronous request;

alerting a advisor if the help request is the synchronous request, the advisor conversing with the client over the link to deduce a problem and a solution;

generating an answer to the problem including a hyper-linked web page and a sticky note for the client; and

associating the answer with the client, such that the client can retrieve the answer multiple times, including the hyper-linked web page and the sticky note.

15. A method of providing help through a client-server system comprising the steps of:

dynamically injecting a help button into web pages displayed to a client system;

permitting the client system to request help from a first web page by pushing the help button; and

providing a persistent answer to the client system that becomes associated with the first web page, and is displayed whenever the client system accesses the first web page.

16. The method of claim 15, wherein the persistent answer is stored on the server system.

17. The method of claim 15, further comprising:

establishing a synchronous collaboration between a customer on the client system and an advisor, the synchronous collaboration providing a synchronous display and permitting the advisor to pilot a browser of the customer

18. The method of claim 15, further comprising:

searching a predictive answer system for a response to the help request, wherein the predictive answer system uses pattern matching with a database to determine whether the response is applicable.

19. The method of claim 18, wherein the pattern includes customer profile and context information.

20. The method of claim 19, wherein the context information comprises previous web page locations visited by the customer and actions on the previous web page locations.

ABSTRACT OF THE DISCLOSURE

A method and apparatus for a network based customer service is provided. In response to a client requesting help, a menu including three levels of interaction is displayed. One level of interaction is self-help searching in a database of information. A second level of interaction is asynchronous help, requesting help and receiving a reply. The third level of interaction is synchronous help, interaction with an advisor. If the client selects synchronous help, the method includes the steps of alerting the advisor and displaying a list of previously visited sites by the client to the advisor. The synchronous help method further includes providing a synchronized display between the client and the advisor, such that the advisor sees an identical display to the client.

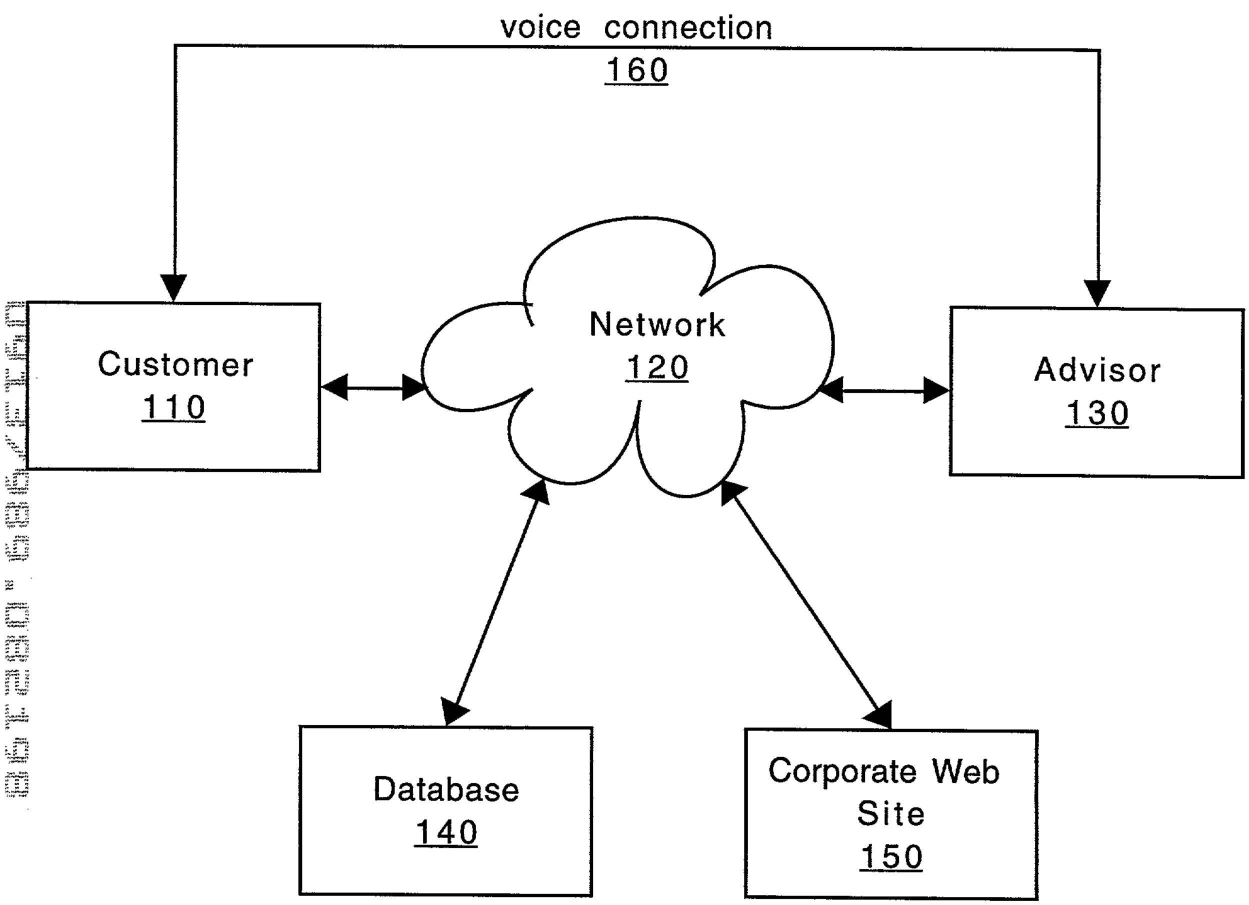

voice connection
160
Customer
110
Network
120
Advisor
130
Database
140
Corporate Web
Site
150

Fig. 1

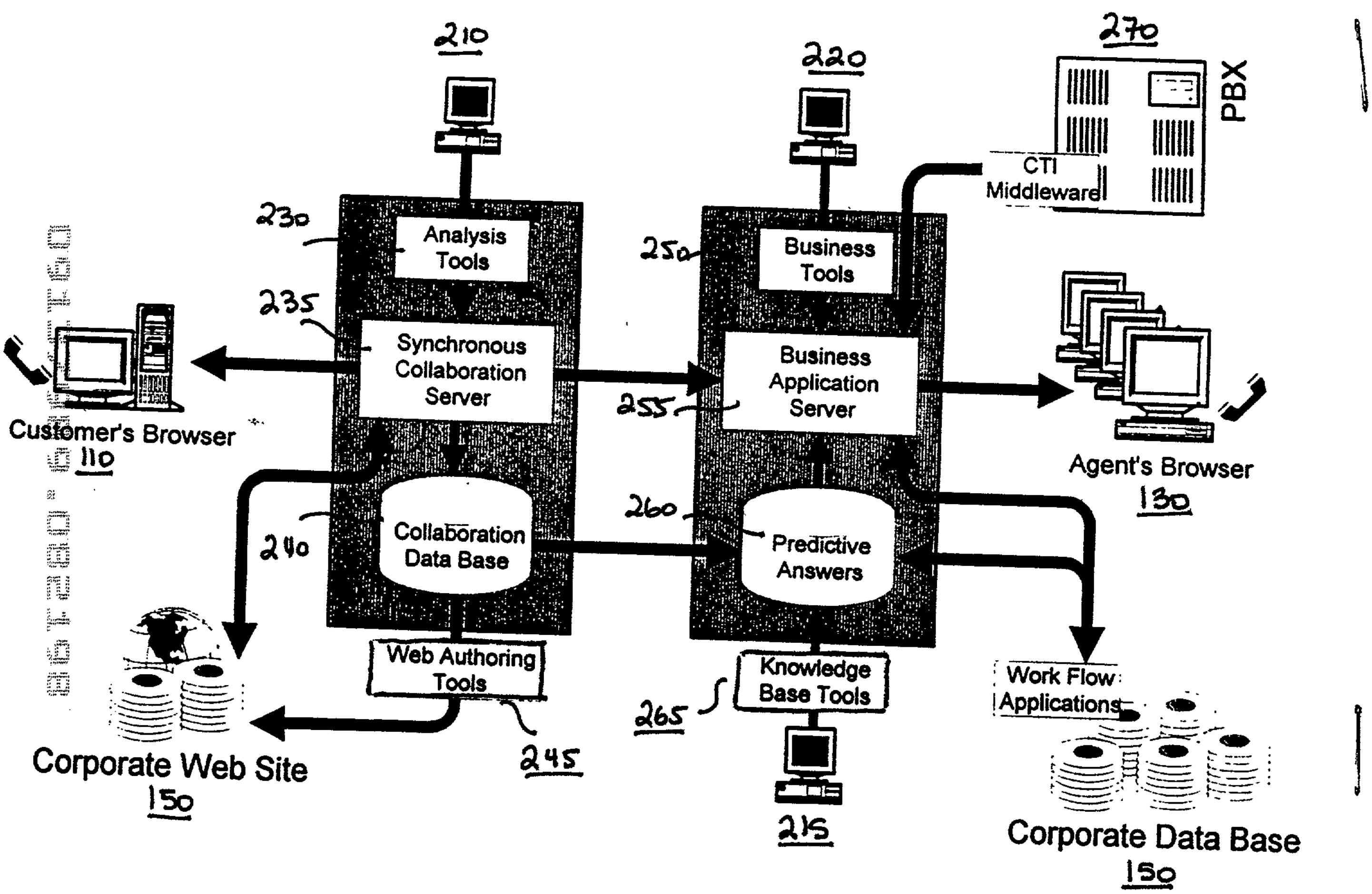

210
220
270
PBX
CTI
Middleware
230
Analysis
Tools
250
Business
Tools
235
Synchronous
Collaboration
Server
Business
Application
Server
255
Customer's Browser
110
Agent's Browser
130
260
240
Collaboration
Data Base
Predictive
Answers
Web Authoring
Tools
Knowledge
Base Tools
265
Work Flow
Applications
245
Corporate Web Site
150
215
Corporate Data Base
150

Fig. 2

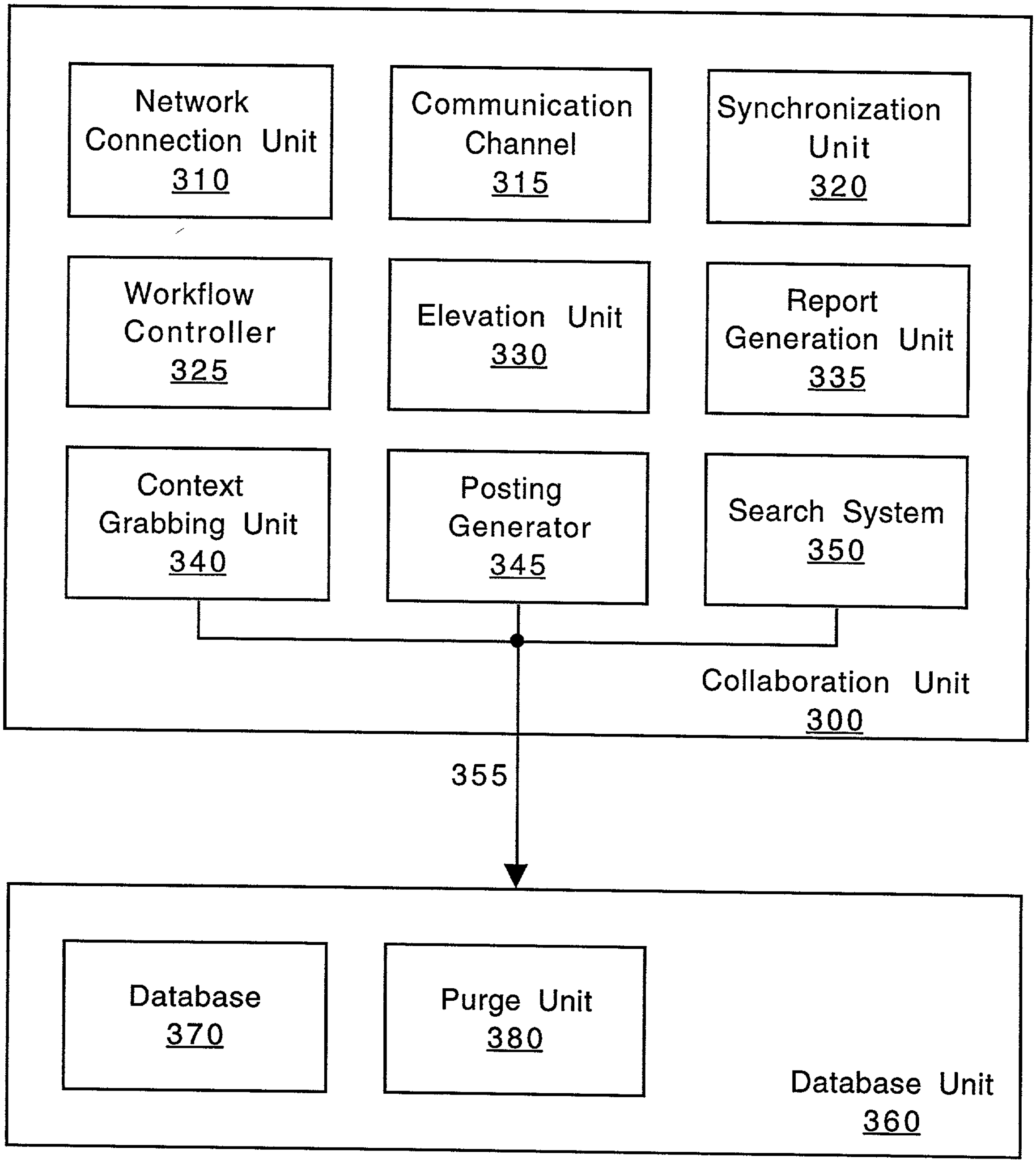
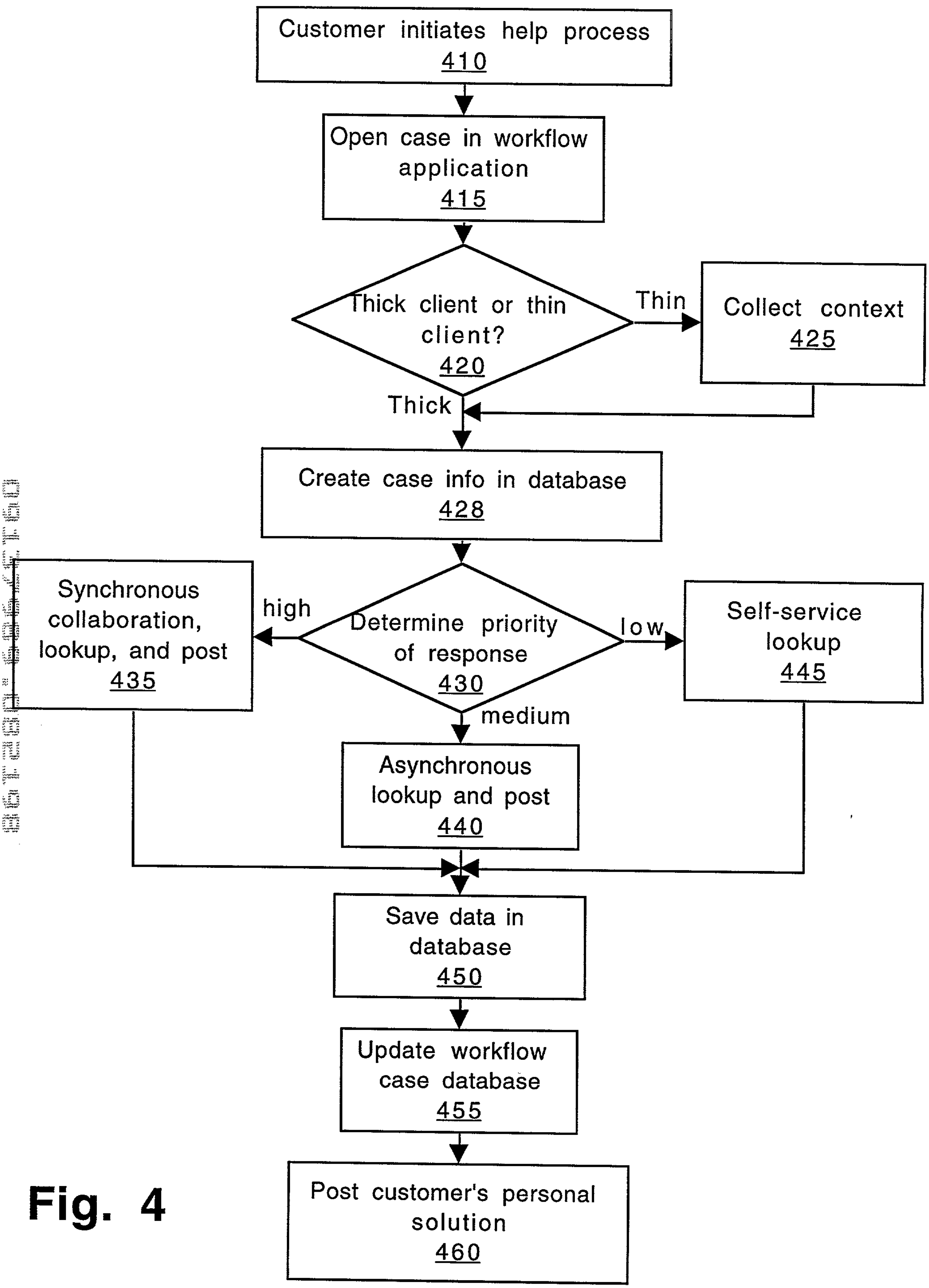

Network Connection Unit 310
Communication Channel 315
Synchronization Unit 320
Workflow Controller 325
Elevation Unit 330
Report Generation Unit 335
Context Grabbing Unit 340
Posting Generator 345
Search System 350
Collaboration Unit 300
355
Database 370
Purge Unit 380
Database Unit 360

Fig. 3



Customer initiates help process 410
Open case in workflow application 415
Thick client or thin client? 420
Thin
Collect context 425
Thick
Create case info in database 428
Determine priority of response 430
high
Synchronous collaboration, lookup, and post 435
low
Self-service lookup 445
medium
Asynchronous lookup and post 440
Save data in database 450
Update workflow case database 455
Post customer's personal solution 460

Fig. 4

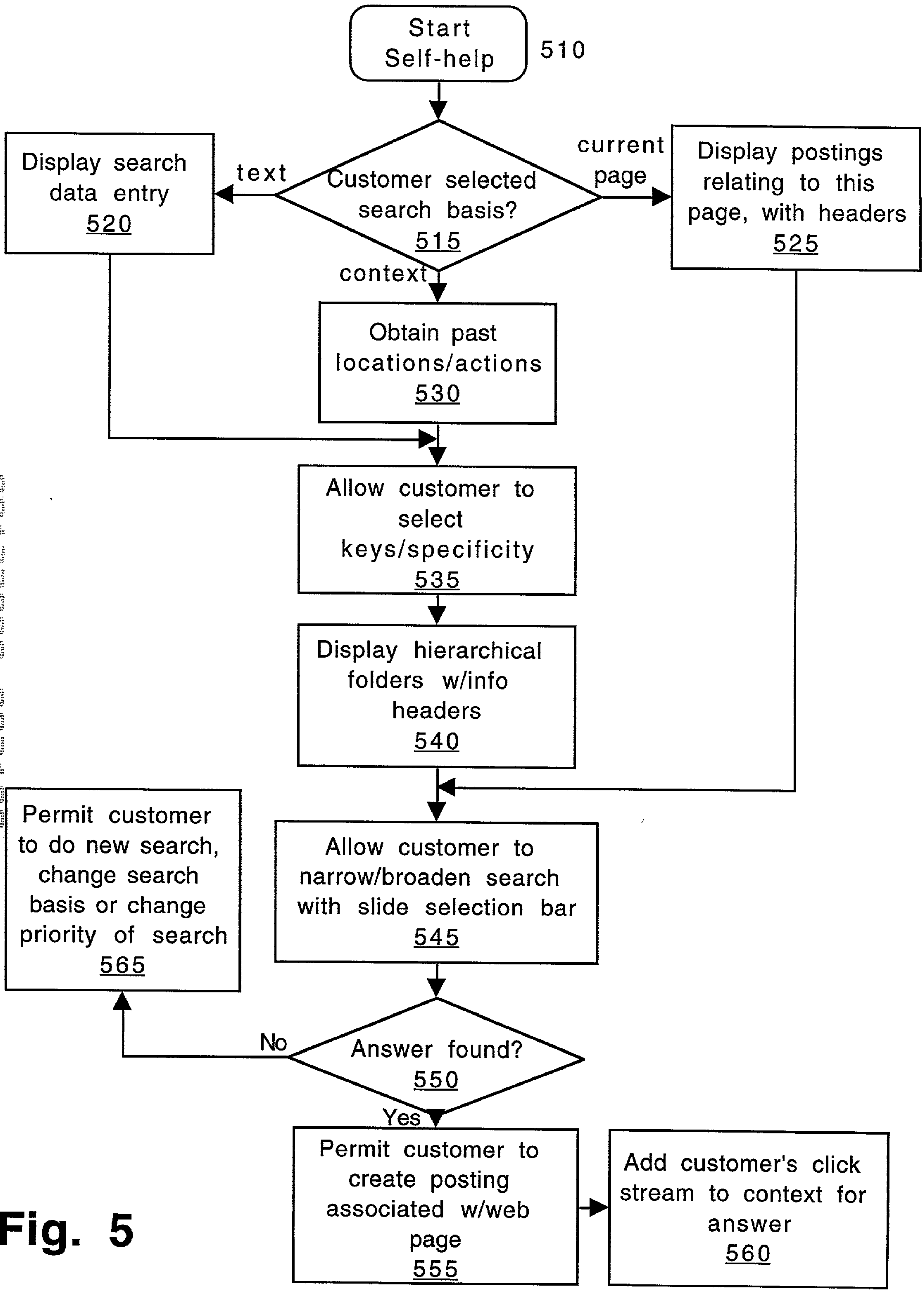

Start Self-help
510
Customer selected search basis?
515
text
Display search data entry
520
current page
Display postings relating to this page, with headers
525
context
Obtain past locations/actions
530
Allow customer to select keys/specificity
535
Display hierarchical folders w/info headers
540
Allow customer to narrow/broaden search with slide selection bar
545
Answer found?
550
No
Permit customer to do new search, change search basis or change priority of search
565
Yes
Permit customer to create posting associated w/web page
555
Add customer's click stream to context for answer
560

Fig. 5

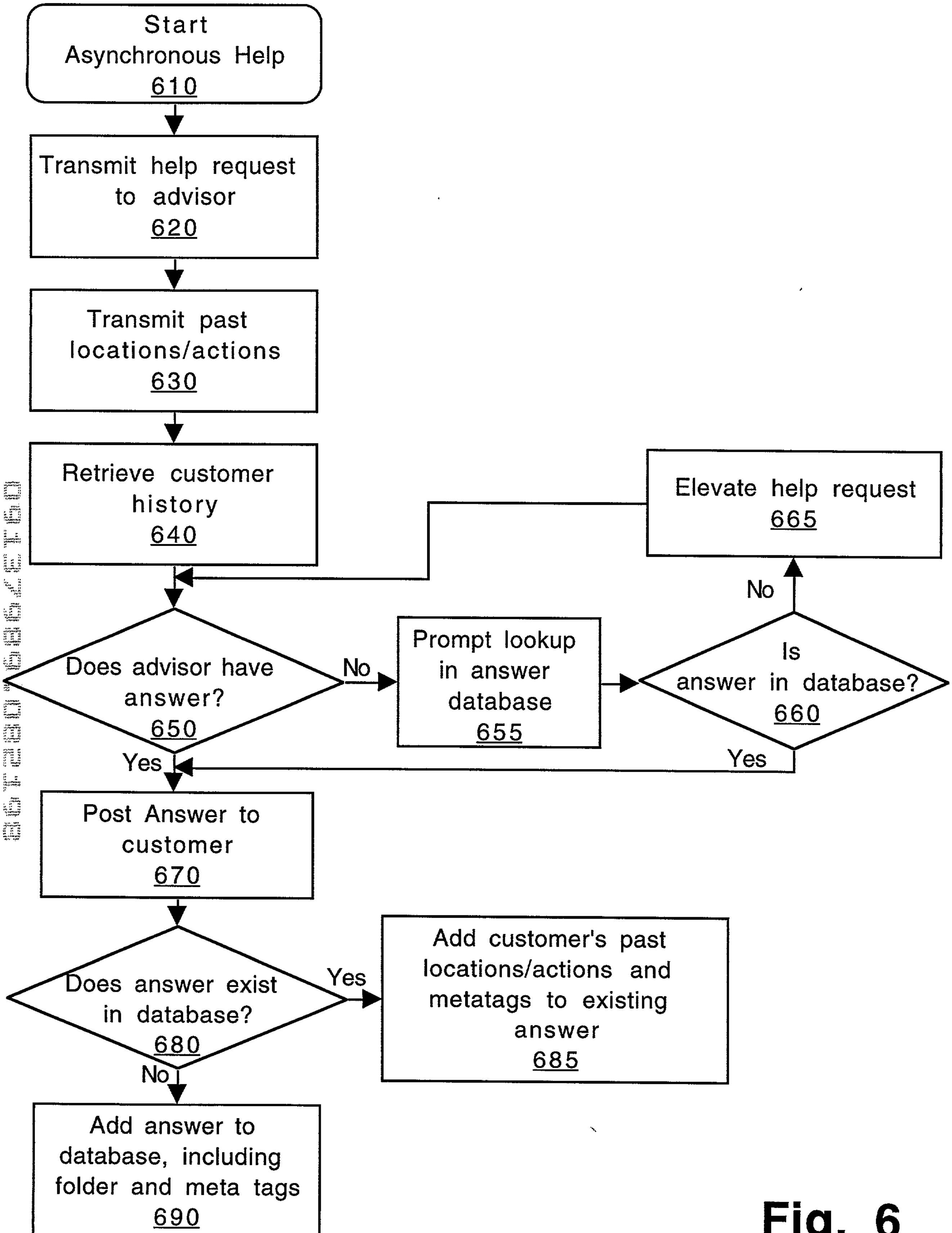
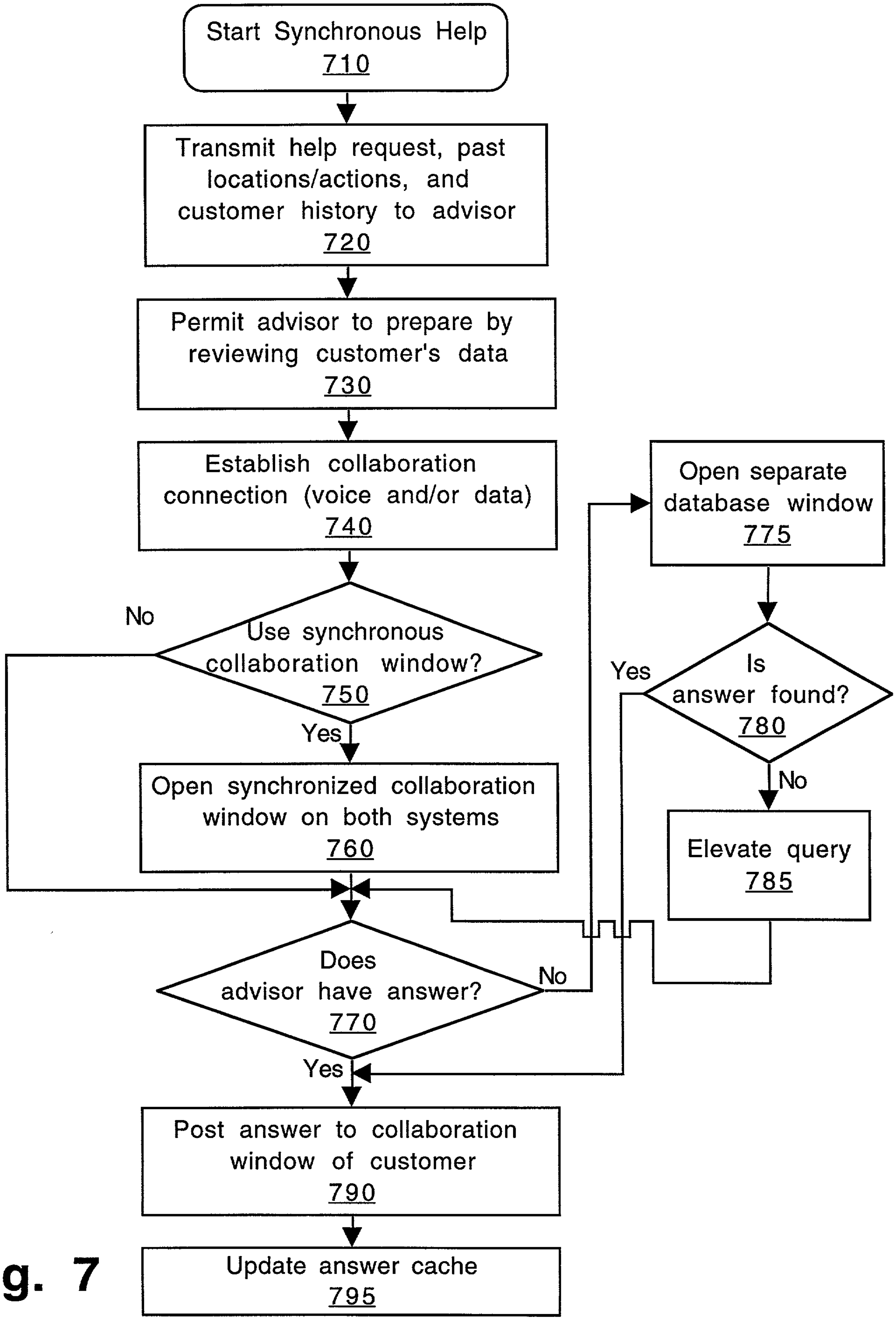

Start
Asynchronous Help
610
Transmit help request to advisor
620
Transmit past locations/actions
630
Retrieve customer history
640
Elevate help request
665
Does advisor have answer?
650
No
Prompt lookup in answer database
655
Is answer in database?
660
No
Yes
Yes
Post Answer to customer
670
Does answer exist in database?
680
Yes
Add customer's past locations/actions and metatags to existing answer
685
No
Add answer to database, including folder and meta tags
690

Fig. 6



Start Synchronous Help
710
Transmit help request, past locations/actions, and customer history to advisor
720
Permit advisor to prepare by reviewing customer's data
730
Establish collaboration connection (voice and/or data)
740
Use synchronous collaboration window?
750
No
Yes
Open synchronized collaboration window on both systems
760
Does advisor have answer?
770
No
Yes
Open separate database window
775
Is answer found?
780
Yes
No
Elevate query
785
Post answer to collaboration window of customer
790
Update answer cache
795

Fig. 7

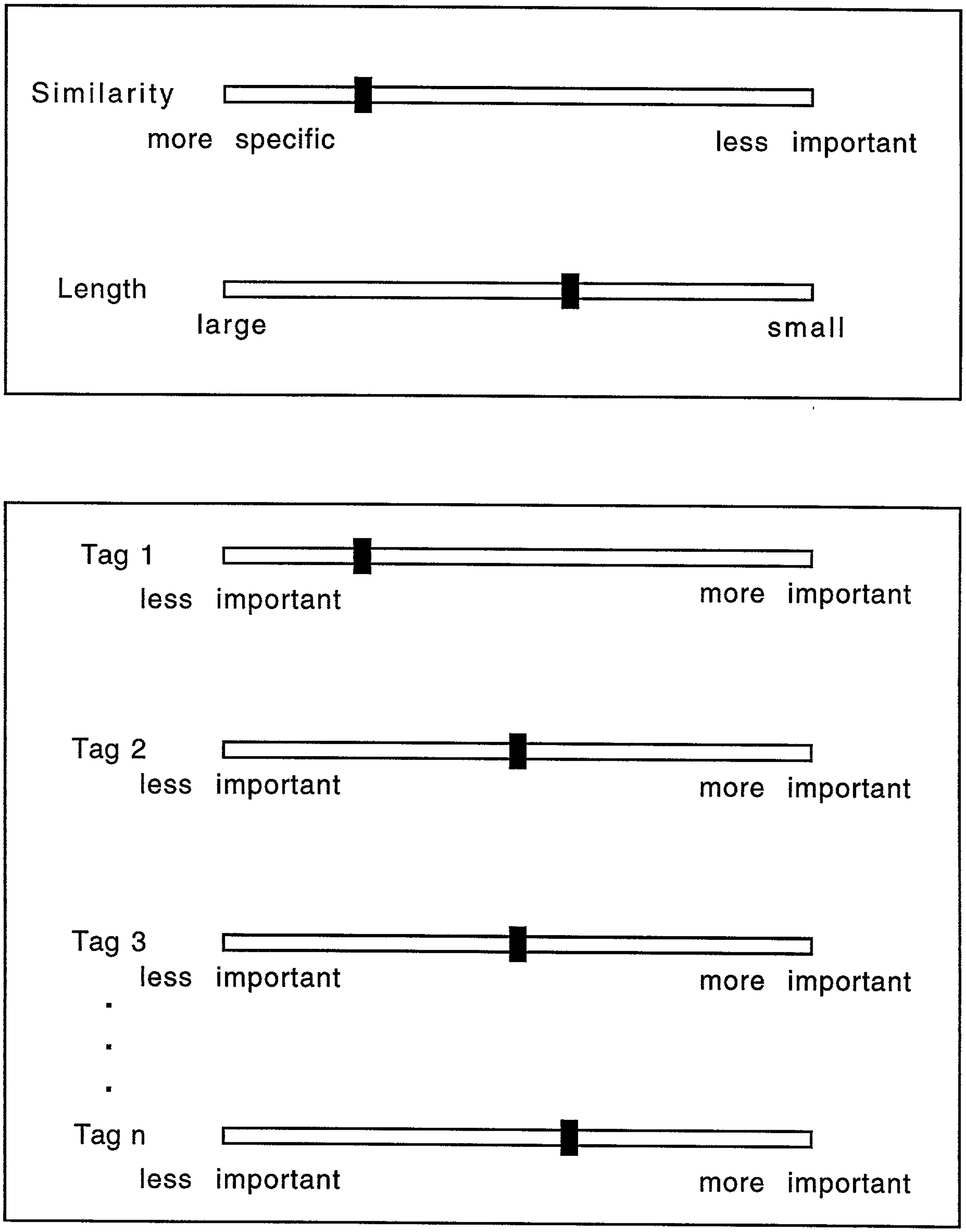

Similarity
more specific
less important
Length
large
small
Tag 1
less important
more important
Tag 2
less important
more important
Tag 3
less important
more important
Tag n
less important
more important

Fig. 8

Attorney's Docket No.: 003395.P001 Patent

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

A METHOD AND APPARATUS FOR NETWORK BASED CUSTOMER SERVICE

the specification of which

X is attached hereto.
___ was filed on ________________ as United States Application Number ________ or PCT International Application Number ________ and was amended on ________________.
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below

(Application Number)	Filing Date
(Application Number)	Filing Date

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Number)	Filing Date	(Status -- patented, pending, abandoned)
(Application Number)	Filing Date	(Status -- patented, pending, abandoned)

I hereby appoint Farzad E. Amini, Reg. No. P42,261; Aloysius T. C. AuYeung, Reg. No. 35,432; Amy M. Armstrong, Reg. No. P42,265; William Thomas Babbitt, Reg. No. 39,591; Carol F. Barry, Reg. No. P41,600; Jordan Michael Becker, Reg. No. 39,602; Bradley J. Bereznak, Reg. No. 33,474; Michael A. Bernadicou, Reg. No. 35,934; Roger W. Blakely, Jr., Reg. No. 25,831; Gregory D. Caldwell, Reg. No. 39,926; Kent M. Chen, Reg. No. 39,630; Lawrence M. Cho, Reg. No. 39,942; Yong S. Choi, Reg. No. P43,324; Thomas M. Coester, Reg. No. 39,637; Roland B. Cortes, Reg. No. 39,152; Barbara Bokanov Courtney, Reg. No. P42,442; Michael Anthony DeSanctis, Reg. No. 39,957; Daniel M. De Vos, Reg. No. 37,813; Robert Andrew Diehl, Reg. No. 40,992; Tarek N. Fahmi, Reg. No. 41,402; James Y. Go, Reg. No. 40,621; Richard Leon Gregory, Jr., P42,607; Dinu Gruia, Reg. No. P42,996; David R. Halvorson, Reg. No. 33,395; Thomas A. Hassing, Reg. No. 36,159; Phuong-Quan Hoang, P41,839; Willmore F. Holbrow III, Reg. No. P41,845; George W Hoover II, Reg. No. 32,992; Eric S. Hyman, Reg. No. 30,139; Dag H. Johansen, Reg. No. 36,172; William W. Kidd, Reg. No. 31,772; Tim L. Kitchen, Reg. No. P41,900; Michael J. Mallie, Reg. No. 36,591; Andre L. Marais, under 37 C.F.R. § 10.9(b); Paul A. Mendonsa, Reg. No. P42,879; Darren J. Milliken, P42,004; Thinh V. Nguyen, P42,034; Kimberley G. Nobles, Reg. No. 38,255; Michael A. Proksch, Reg. No. P43,021; Babak Redjaian, P42,096; James H. Salter, Reg. No. 35,668; William W. Schaal, Reg. No. 39,018; James C. Scheller, Reg. No. 31,195; Anand Sethuraman, Reg. No. P43,351; Charles E. Shemwell, Reg. No. 40,171; Maria McCormack Sobrino, Reg. No. 31,639; Stanley W. Sokoloff, Reg. No. 25,128; Allan T. Sponseller, Reg. No. 38,318; Geoffrey T. Staniford, P43,151; Judith A. Szepesi, Reg. No. 39,393; Vincent P. Tassinari, Reg. No. P42,179; Edwin H. Taylor, Reg. No. 25,129; George G. C. Tseng, Reg. No. 41,355; Lester J. Vincent, Reg. No. 31,460; John Patrick Ward, Reg. No. 40,216; Stephen Warhola, Reg. No. P43,237; Ben J. Yorks, Reg. No. 33,609; and Norman Zafman, Reg. No. 26,250; my attorneys, of BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, with offices located at 12400 Wilshire Boulevard, 7th Floor, Los Angeles, California 90025, telephone (310) 207-3800, and James R. Thein, Reg. No. 31,710, my patent attorney; with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

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Inventor's Signature ______ Date ______

Residence ______ (City, State) Citizenship ______ (Country)

Post Office Address ______

Full Name of Fourth/Joint Inventor ______

Inventor's Signature ______ Date ______

Residence ______ (City, State) Citizenship ______ (Country)

Post Office Address ______

Title 37, Code of Federal Regulations, Section 1.56
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(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclosure information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclosure all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) Prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made or record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.